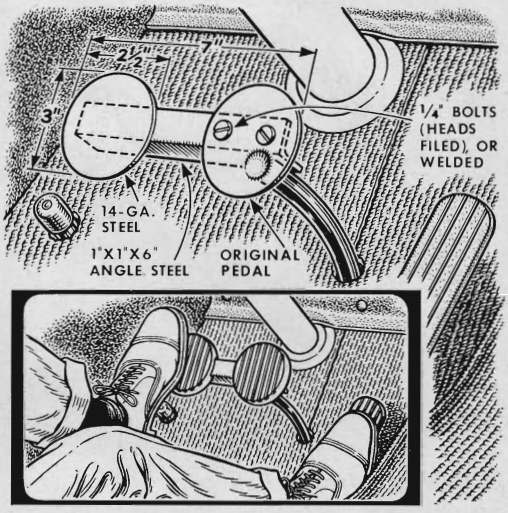
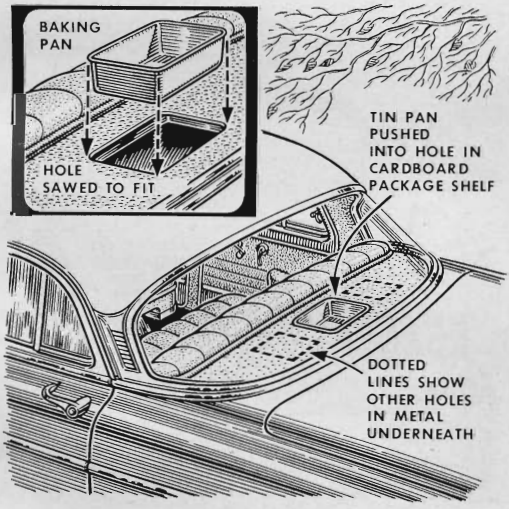
Hints FROM THE MODEL GARAGE

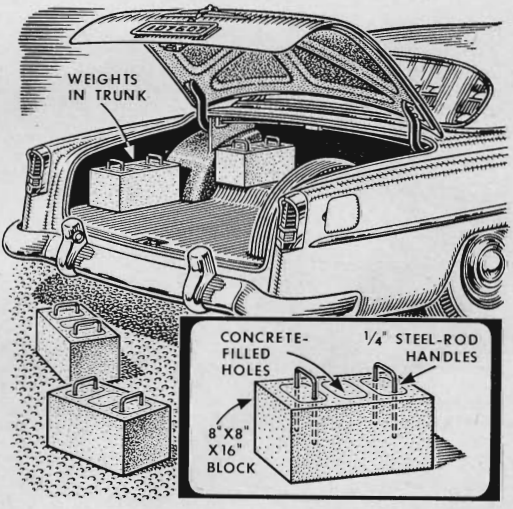
Parking downtown in a too-short space won't be a wrestling bout with your steering wheel if there's a store window opposite your parking spot. You can usually see from the reflection how your car lines up with those on either side of you.



A two-footed brake pedal is a real convenience on an automatic-shift car. This sketch shows an extension that puts the pedal within easy reach of your left foot. Weld an extra pedal to the extension. A dealer will sell you a pedal pad.


BAKING PAN
HOLE SAWED TO FIT
TIN PAN PUSHED INTO HOLE IN CARDBOARD PACKAGE SHELF
DOTTED LINES SHOW OTHER HOLES IN METAL UNDERNEATH

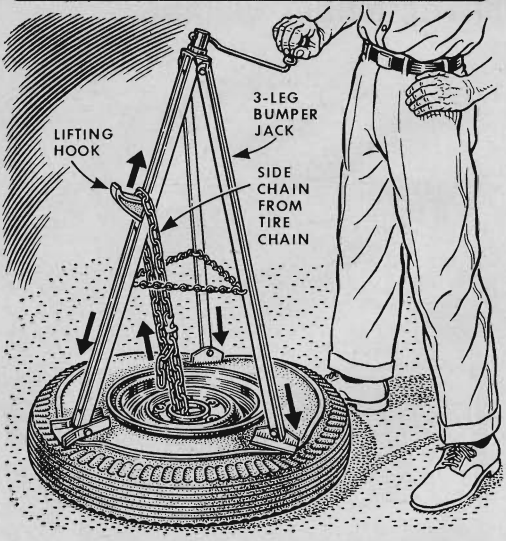
Small objects won't roll around if you set a baking pan into the package shelf. The sheet metal under the cardboard of the shelf usually has several holes to reduce weight. Locate one and cut the cardboard to fit the pan so that it drops into place snugly.



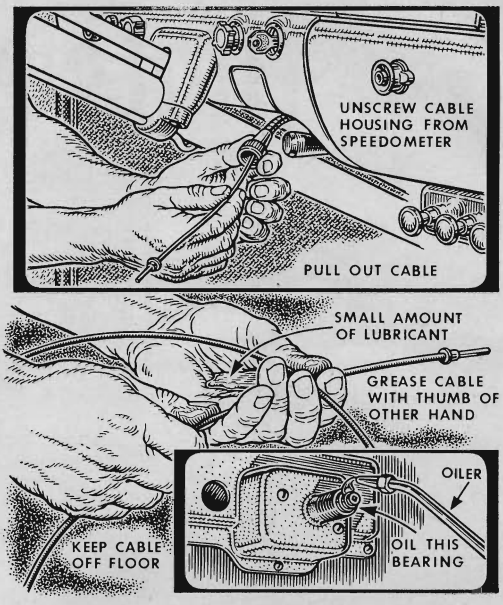
Weights in the trunk will add traction to the rear wheels, especially in a car that has its weight concentrated at the front. For winter driving, heave in several concrete blocks. Rods set in the blocks will make them a lot easier to handle.

Please turn the page for more auto hints

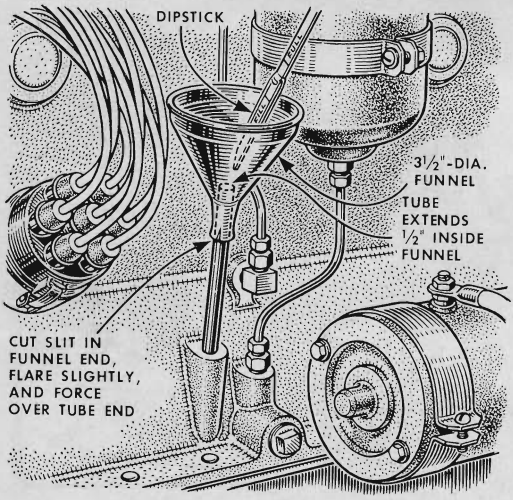
MORE Hints from the Model Garage



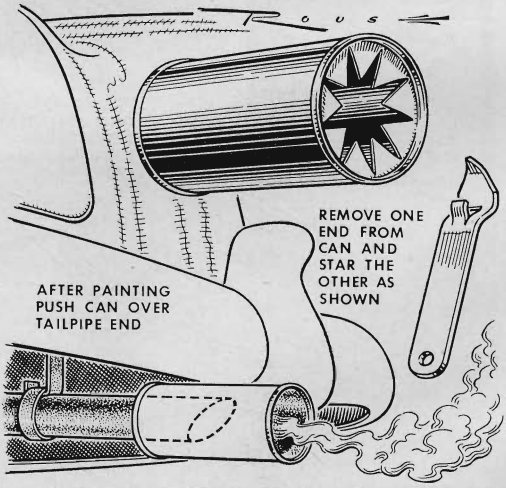
Breaking a frozen tire bead with a jack is an old trick. But here's that stunt in new form, using a tripod jack. Run a sling—an old tire chain or towline rope is fine for this—through the wheel hole, between the lifting hook on the jack and a crosspiece set under the wheel. Cranking will cause the legs to force the bead away.



A jiggling speedometer needle, accompanied by whirs and ticks, is a signal that your speedometer cable needs lubricating. It's recommended every 10,000 miles in any case. Rub light graphite grease on the cable—sparingly within 6″ of the speedometer-head end. And put a few drops of oil on the bearing at the back of the head.

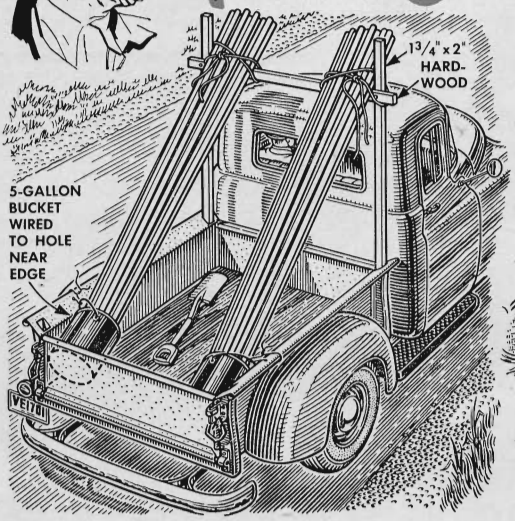


Dipstick tubes are hard to see in a dark garage. You can end fumbling—and greasy sleeves—with a small funnel. Cut a short slit in the spout of the funnel and force it over the tube as a guide. Remove the funnel occasionally and wipe it clean.



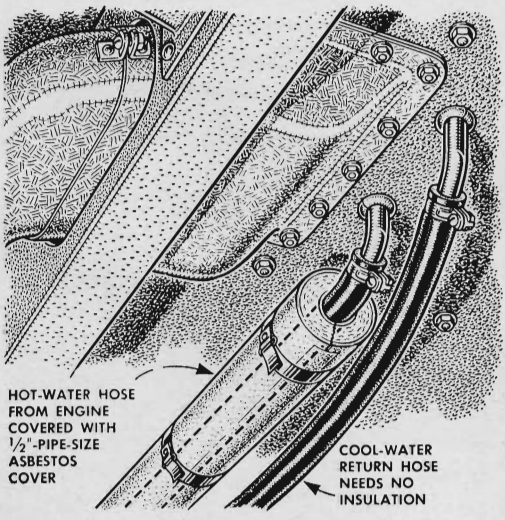
A no-cost tailpipe extension can be made from a beverage can. Remove one end of the can and make notches in the other, cutting them so closely together that a star-shaped piece of metal drops out. Push tabs back up and shove jagged end on tailpipe.

Hints FROM THE MODEL GARAGE

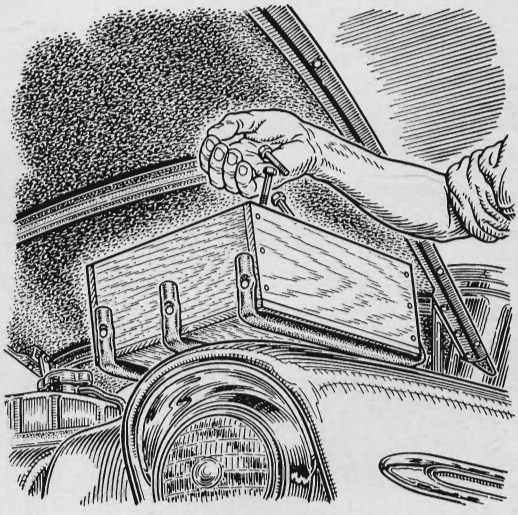


Carrying long pieces of pipe in a pickup truck is easy when you do it this way. Install empty pails in the rear corners of the truck bed to serve as quivers for the ends of the pipe lengths. Be careful if you should come to an underpass that's a bit low.

There ought to be a law against service-station attendants who slam a hood shut. Engineers say that hoods were designed to close with gentle pressure. If slamming is required, previous slamming may have damaged the latch or warped the hood itself.



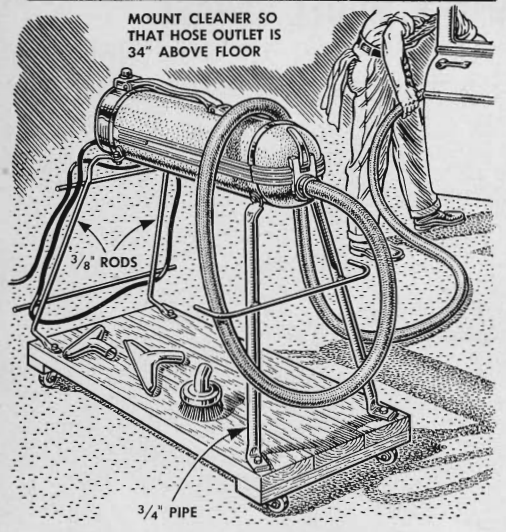
An underseat heater may lose heat from a long supply line. If you have this type of heater, better check to see whether you can do something about insulating the line. Applying the snap-on type of insulation used in houses will do the trick very effectively.



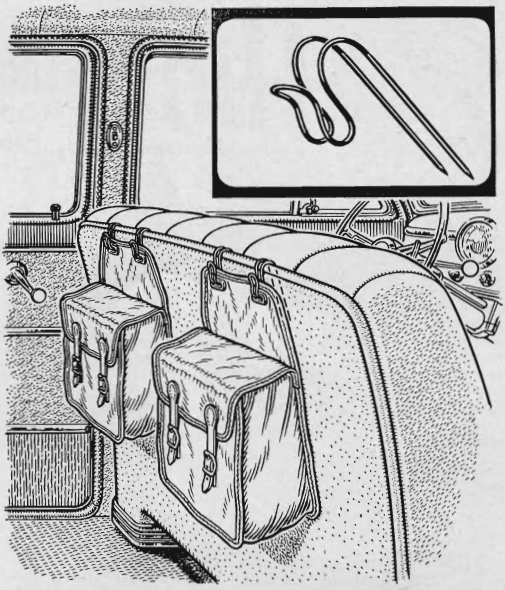
Two-tone parts boxes are not yet a necessity in a service garage. But one operator says that frequent replacement of gritty old boxes with new, clean ones pays off. Soft rubber on the bottoms protects fenders. Parts are cleaned before they're put back.

Please turn the page for more auto hints

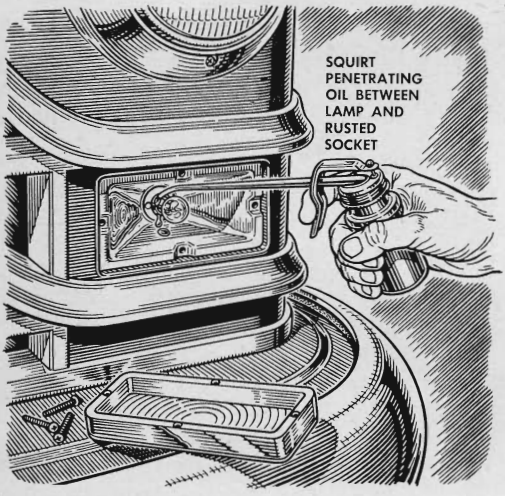
MORE Hints from the Model Garage



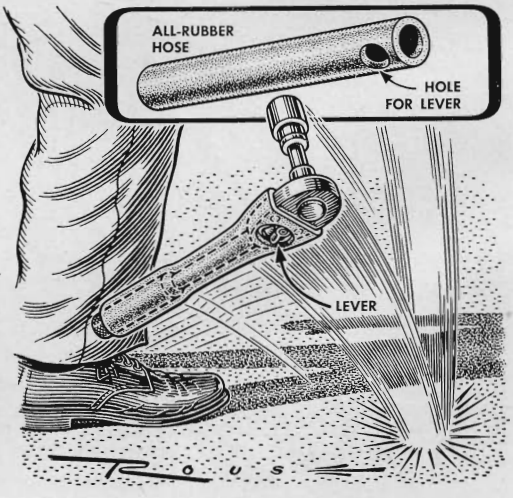
A vacuum cleaner mounted on a rolling stand like this makes it easier to clean car interiors in a service station. Dragging on the floor is eliminated and the cleaner is kept out of grease and dirt. A more effective hose length is achieved since the cleaner is at cushion height and follows easily as the cleaning job progresses.



A pair of bicycle saddlebags mounted like this will add a lot of useful storage space to a sedan. The bags look good, too. Form a pair of supporting pins for each bag from 1/16″ piano wire and sharpen the points. Just push the pins down into the upholstery. The bags can be lifted off the hooks and used as carriers if desired.

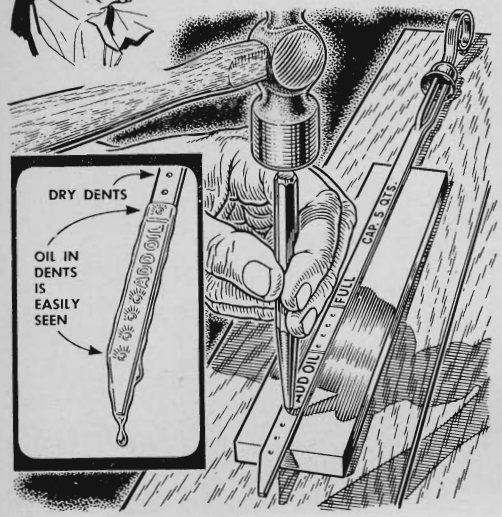


Squirt penetrating oil around a tail-light or parking-light bulb that you find rusted fast to its socket shell. Otherwise, you run the chance of damaging the socket. Coat the socket and the new bulb with oil so that removal next time will be fast and easy.

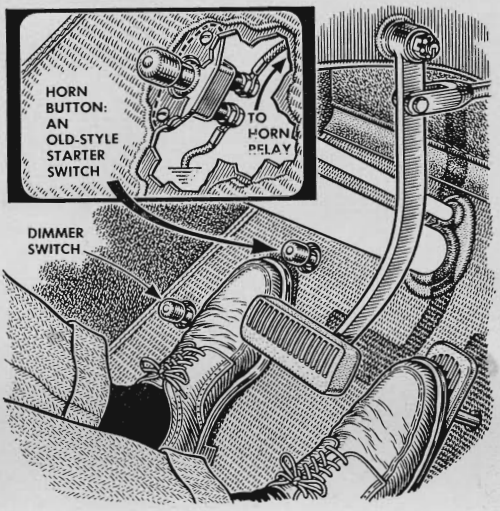


Dropping a ratchet onto a cement floor, when the tool is being used with a socket set under a car, is a common occurrence. Often the small lever is snapped off. As a safeguard, one mechanic slipped a piece of rubber hose over the wrench, like this.

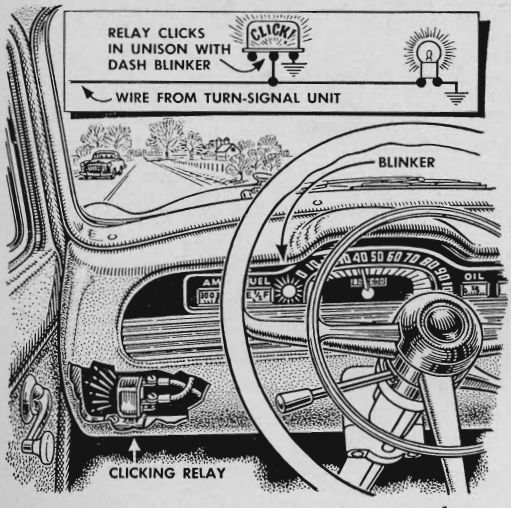
Hints from the Model Garage



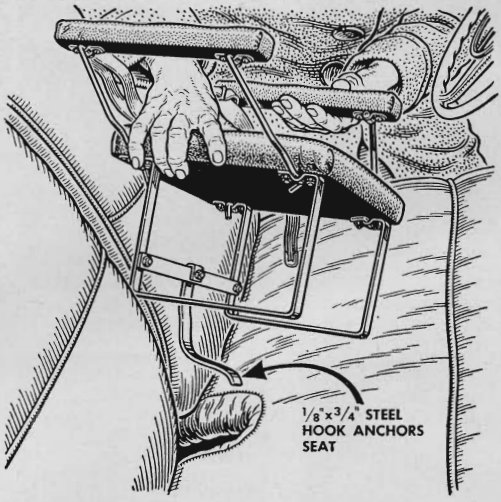
It's easier to check the oil in a warm engine containing light oil if you make a series of dents along the dipstick with a center punch. Oil held in the dents will be easily visible even when it's difficult to see any oil on the stick.



That idle left foot always bothers a veteran driver when he first drives a car that lacks a clutch pedal. Here's one man's solution—an auxiliary horn button on the floor. The switch is a single-pole, single-throw, normally-off job.



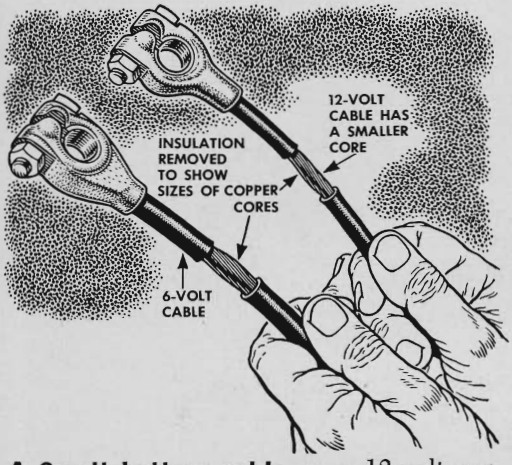
Safeguard against turn signals that continue to blink when they shouldn't by installing this added warning system. Wire a 6-volt DC relay in the circuit with the warning blinker. If you don't see the blinker, you'll hear the relay.



Anchoring a child's seat is a simple matter in cars with a center hole between the front seats. Bolt on a steel hook like this. Swing the hook in an arc through the hole to engage the seat securely, giving the child a safer ride.

 Please turn to page 236 for more auto hints

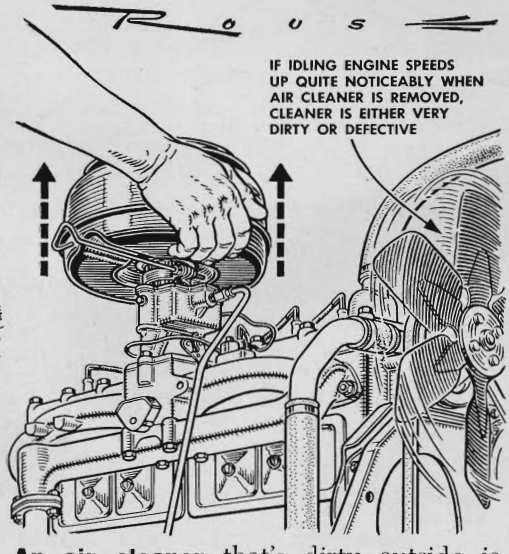
More Hints from the Model Garage



A 6-volt battery cable on a 12-volt car works fine, but don't try it the other way around or you'll get sluggish action. The reason? To save copper, manufacturers make 12-volt cores smaller since they must carry only half the amperage to produce the same wattage (volts × amps).

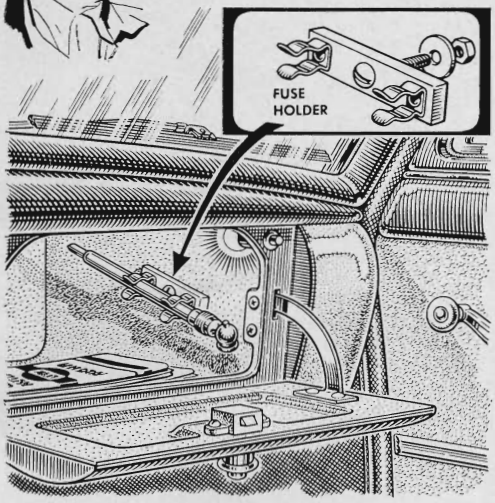
A removable caster like this will keep a small trailer level when it's unhitched—and make it easier to shove around. Bolt the flange to the underside of the tongue. Carry the rest of the caster unit in the trailer or tow car. Before unhitching screw the pipe into the flange.

A battery hydrometer may get dirty and milky inside after long use. To clean, dissolve a tablespoon of detergent in a pint of warm water. Suck the solution into the hydrometer and let it stand for a half hour. Then rinse with clean water.



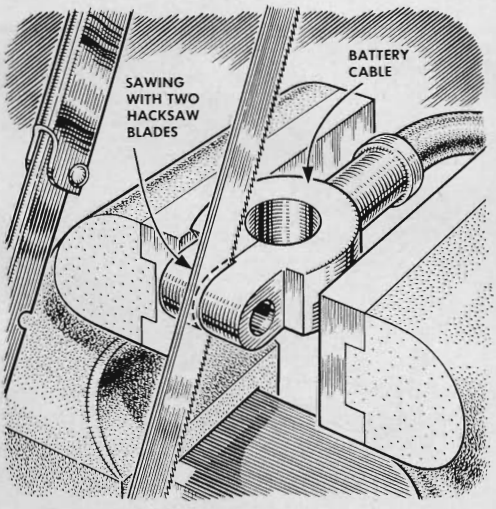
An air cleaner that's dirty outside is undoubtedly dirty inside. So you ought to clean it. Idle the engine as you take it off. If the engine begins to run faster, you can be sure that the cleaner is very dirty—or not functioning properly.

Hints from the Model Garage

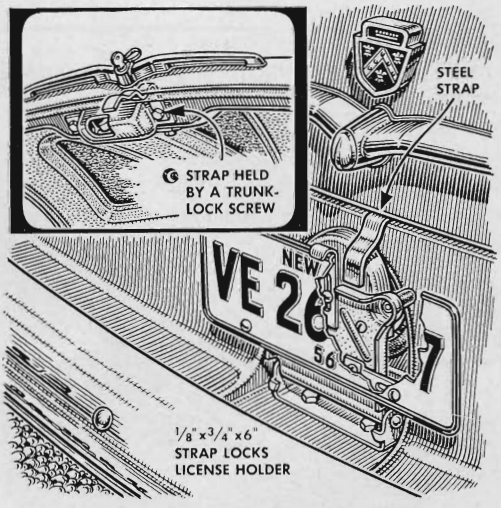


Want to store a tire gauge in a safe and convenient spot? Mount a suitable fuse holder inside the glove compartment and you've got it. The holder can usually be bolted to the side of the compartment.

Removing a window channel to replace the glass is often a tough job, especially if rust has formed on the metal. To save time and temper, apply heat to the bottom side of the channel with a torch.



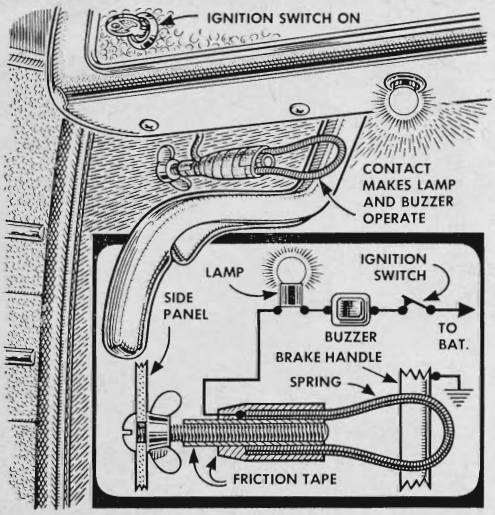
If the hole of a battery clamp is too big to fit snugly on the post, remove the cable from the car, clamp the terminal in a vise, and hacksaw along the lips with two blades. This removes enough metal to fit the clamp to the post.



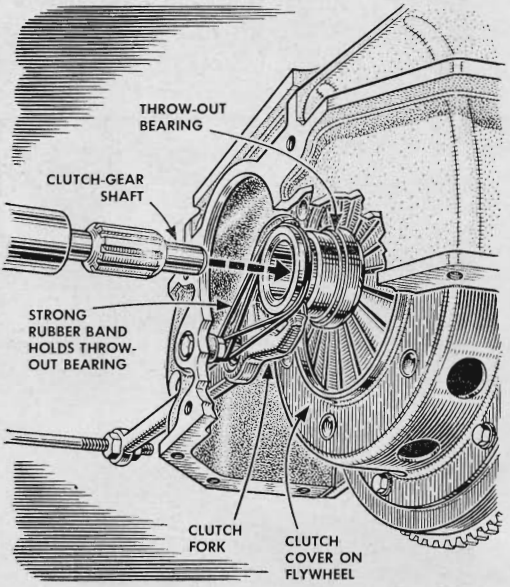
A rear trunk key also serves as a gas-cap key in this setup for a car that has the filler pipe hidden behind a tilt-down license plate. A steel strap projecting from the deck lid prevents access to the gas cap until the lid is lifted.

Please turn the page for more auto hints

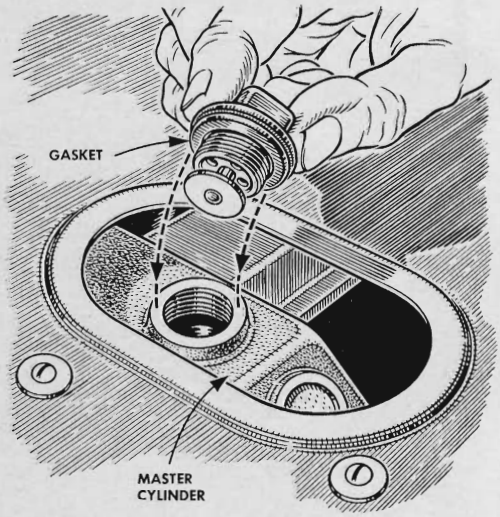
More Hints from the Model Garage



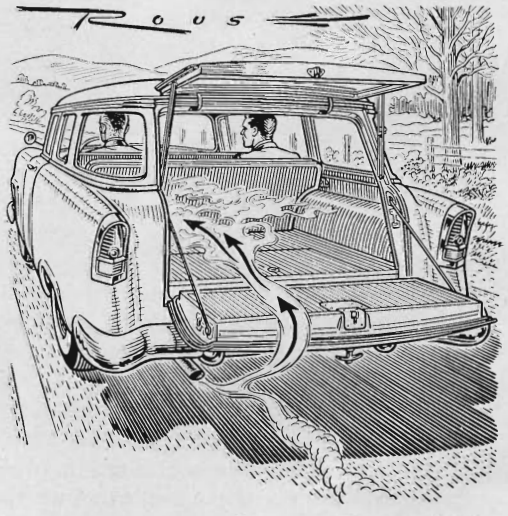
A parking-brake signal will cure the absent-minded who tend to start off with the brake set. A buzzer buzzes and a light stays on until you push the brake handle away from the coil spring, breaking the circuit that is set up when the ignition switch is turned on. Tape insulates the spring from its mounting bolt.



In reassembling a clutch, one mechanic uses a rubber band to keep the throw-out bearing in its yoke while he pushes the transmission clutch-gear shaft through it. Left in place, the band soon breaks and falls out of the way. The idea is especially good for Chevvy clutches but can also be used on some others.

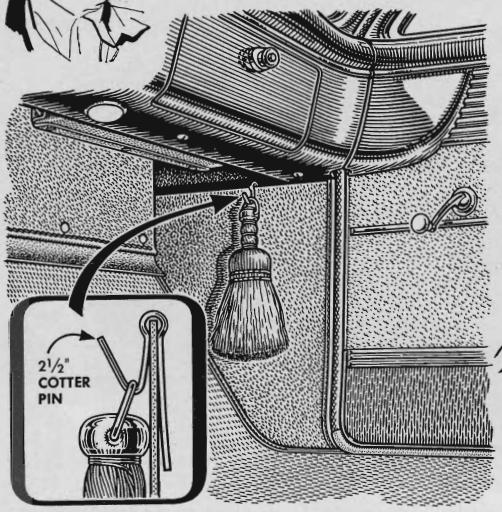


When adding brake fluid to the master cylinder, be sure that there's a gasket under the cap—or it may stick the next time you try to remove it. And don't tighten too hard. Caps sometimes break.



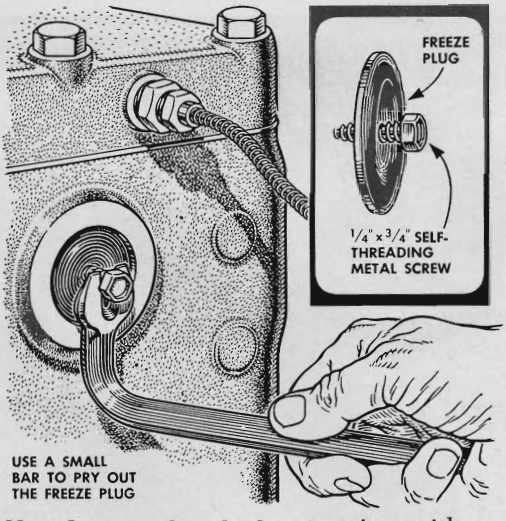
Exhaust gases tend to swirl forward into a station wagon when it is driven with the tailgate down. If you must keep it open, remember to open all the windows and ventilators while you drive.

Hints from the Model Garage

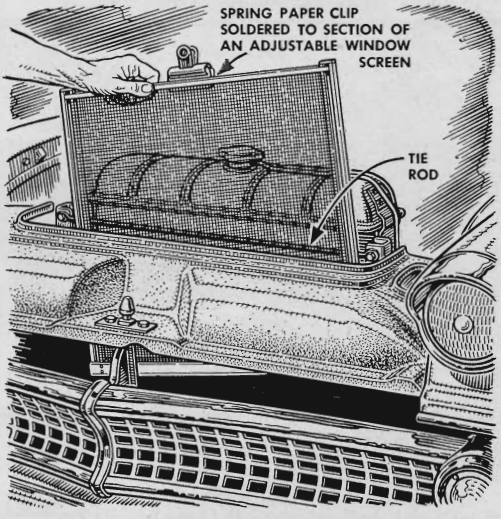


A cotter-pin hook like this will keep a whisk broom handy for sweeping out the car. Bend up one arm of the pin as shown. Then slip it over the side panel or through a hole punched in the panel.

An unfolded map pinned neatly to the head-lining above the front seat is easily referred to during a trip. The driver should consult it of course only after stopping, for instance, at a stop light.



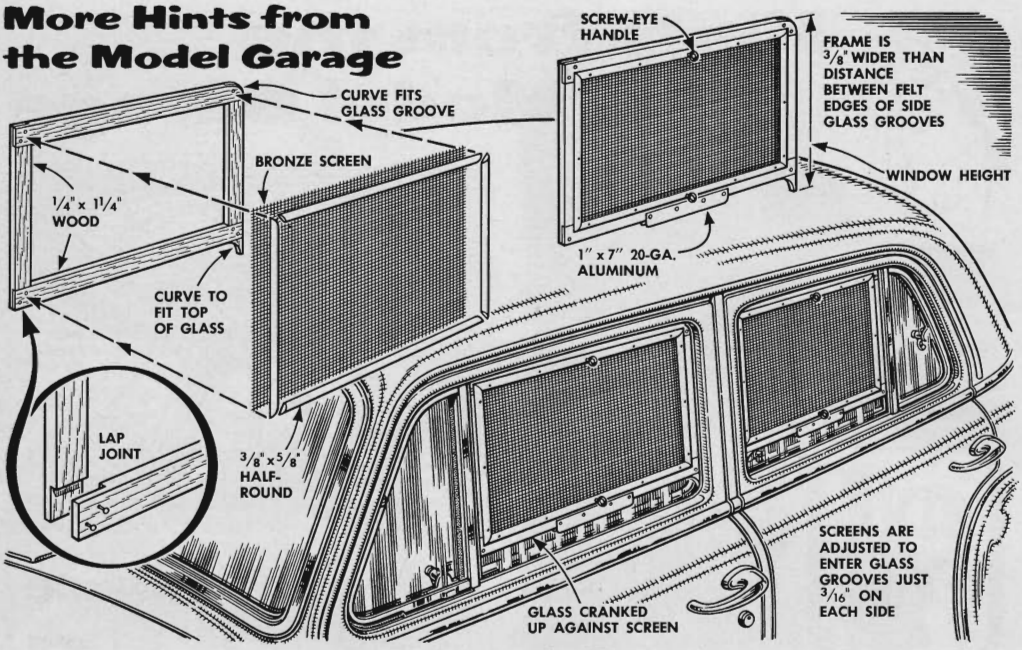
If a freeze plug leaks, tapping with a hammer will usually seal it. When this doesn't work, one mechanic drills a small hole in the center of the plug, turns in a metal screw about four turns, pries out the plug and drives in a new one.



During the bug season one motorist keeps insects from plugging his radiator by slipping a section of an adjustable window screen into the opening behind the grille. A clip soldered to the screen rim holds it to the radiator tie rod.

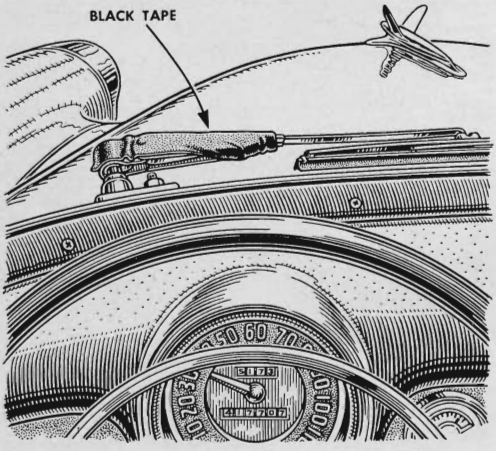
Please turn the page for more auto hints

More Hints from the Model Garage

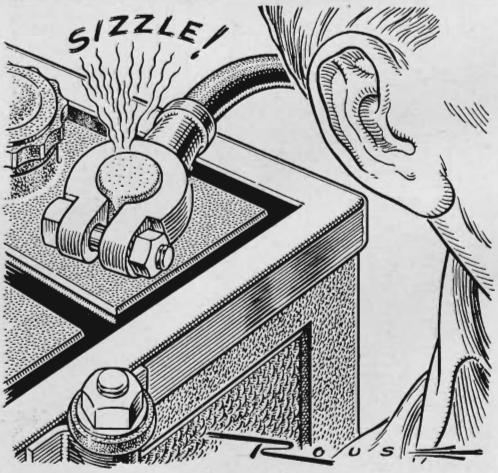

SCREW-EYE HANDLE
FRAME IS 3/8" WIDER THAN DISTANCE BETWEEN FELT EDGES OF SIDE GLASS GROOVES
WINDOW HEIGHT
CURVE FITS GLASS GROOVE
BRONZE SCREEN
1/4" x 1 1/4" WOOD
1" x 7" 20-GA. ALUMINUM
CURVE TO FIT TOP OF GLASS
LAP JOINT
3/8" x 5/8" HALF-ROUND
SCREENS ARE ADJUSTED TO ENTER GLASS GROOVES JUST 3/16" ON EACH SIDE
GLASS CRANKED UP AGAINST SCREEN

A set of screens for your car will help you keep cool at drive-in movies on summer evenings despite mosquitoes.

The screens above are designed to fit modern cars that have windows with side channels ¼″ wide and ⅜″ deep. The frame should be ⅜″ wider than the distance between the felt edges of the side channels. To install, a screen is shoved to full ⅜″ depth in one side channel, allowing the opposite edge to enter and be pushed back 3/16″. The window is then cranked up between the aluminum strips against the screen, shoving the upper edge into the top channel. Yardsticks are ready-sized wood for the frames.

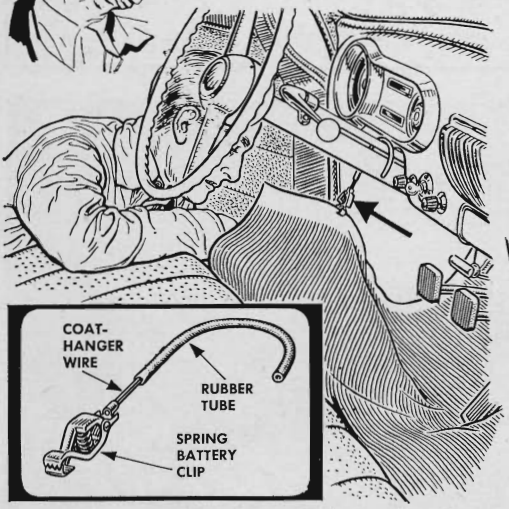


Sunlight reflecting off the shiny chrome covers of windshield wiper arms can be quite annoying while you are driving during the summer months. Eliminate the glare by sticking a piece of black tape to the upper surface of each arm cover.



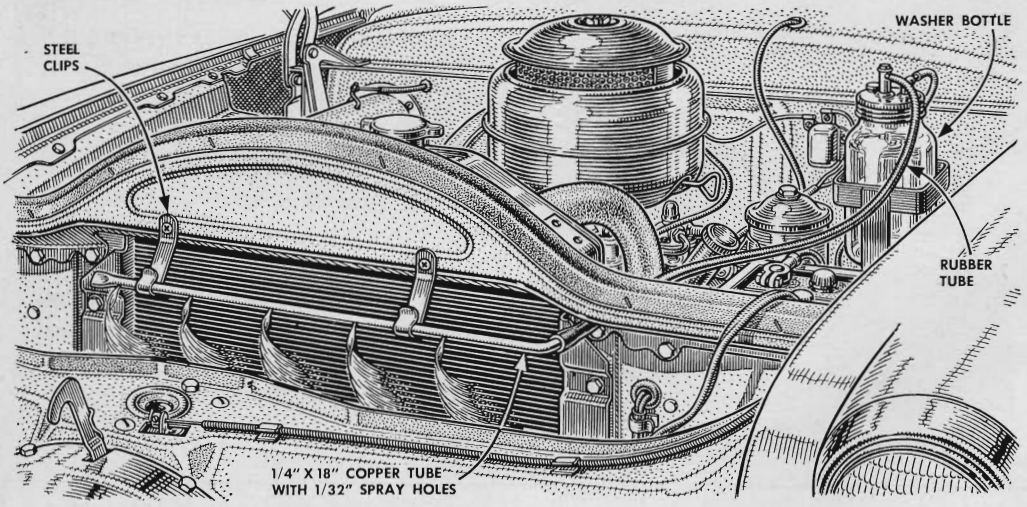
A frying noise from this battery terminal was the only response when the starter switch was depressed. The cable *seemed* tight. But the mechanic found it was making only slight contact with the post. Cleaning completed the circuit.

Hints from the Model Garage



A handy hook like this will keep the floor mat out of the way while a mechanic is servicing a master cylinder that is located underneath the floorboard. The hook will also help to prevent crimping and breaking of the floor mat.

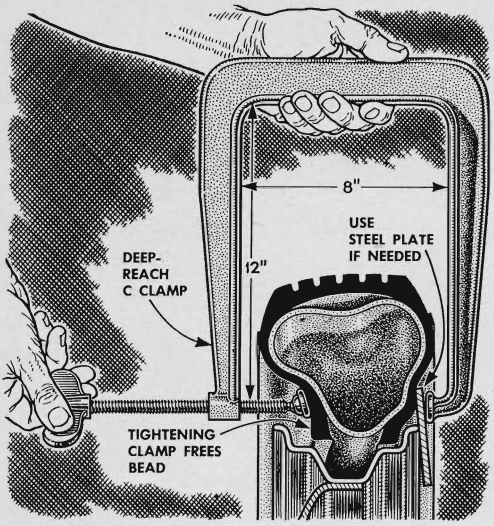
Fan belt squeak? One man who had been trying to quiet his for five years offers this tip: Use just a little auto paste wax on the inside surface of the fan belt. The wax doesn't seem to cause any noticeable slippage, he says.



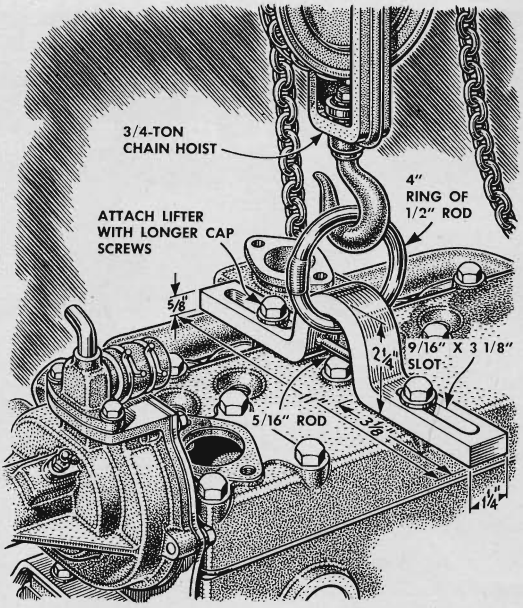
A long pull on a mountain grade may cause an engine to overheat when you are towing a trailer. Spraying the radiator like this will help keep the temperature down. Drill five $\frac{1}{32}$" holes in an 18" piece of $\frac{1}{4}$" copper tubing. Fasten the tubing to the radiator shroud with steel clips. Connect the spray tube and the outlet of the windshield-washer bottle with rubber tubing. Squirt water on the radiator each time that the temperature creeps too far above the normal heat range.

Please turn to page 208 for more auto hints

More Hints from the Model Garage

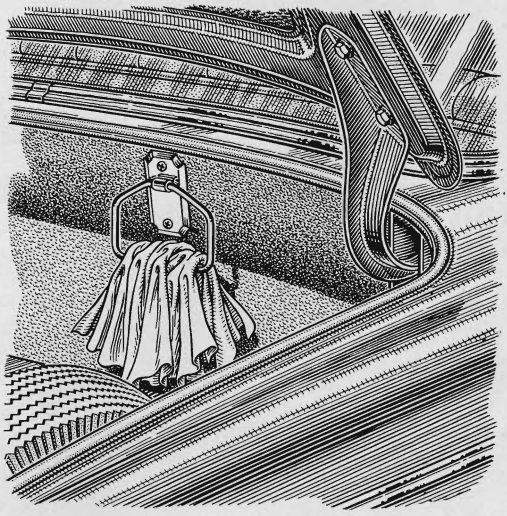


Bead stuck when you start to demount a tire? Here's one way to remove it—if you have or can borrow a deep-throated C clamp of about the dimensions shown. With clamp in place, turn screw to free one side. If the second side remains stuck, use a steel plate as in the drawing.



A universal engine lifter is what its developer calls this useful shop accessory. Slots make it possible to attach the lifter to a variety of engines: Merely replace two cap screws with longer screws. The lifter was bent to the desired shape from a bar of 5/8"-by-1 1/4" steel stock.

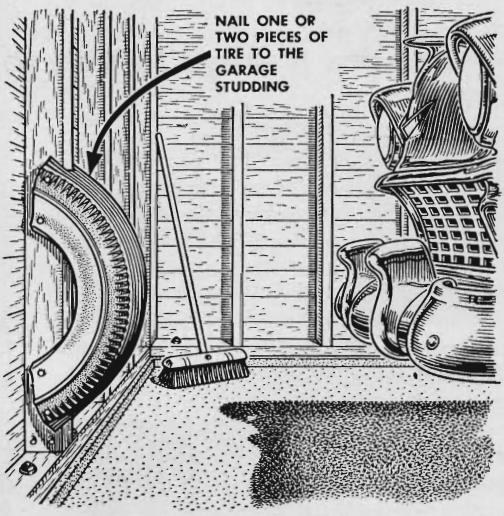
Evaporated milk is part of the stock in trade of one garage man. Poured into a radiator, it often stops small leaks. If the leak continues, the mechanic concludes that a radiator repair job is needed.



Do you use a polishing cloth on frequent occasions between washings to keep your car spotless? Drape it over a chrome towel ring mounted (with sheet-metal screws) in the luggage compartment.

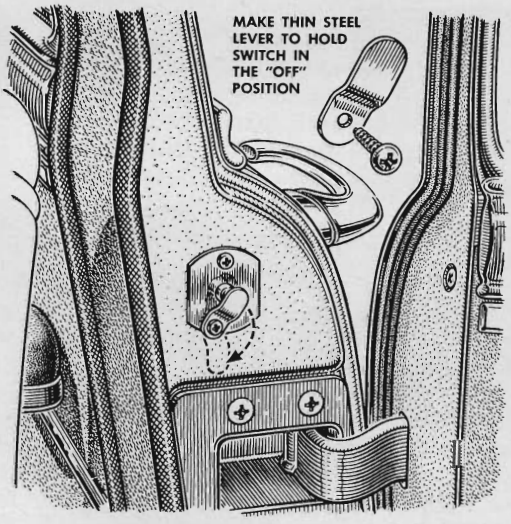
Hints from the Model Garage

Use two wrenches to tighten a battery-cable clamp, pushing with equal force in opposite directions. Then you aren't so likely to loosen the lead binding post and damage the battery cell beneath.



Squeezing a new car into an old garage just about requires wall bumpers. Among the best are sections cut from an old tire. Notch them at each end so that they can be nailed over the studs.

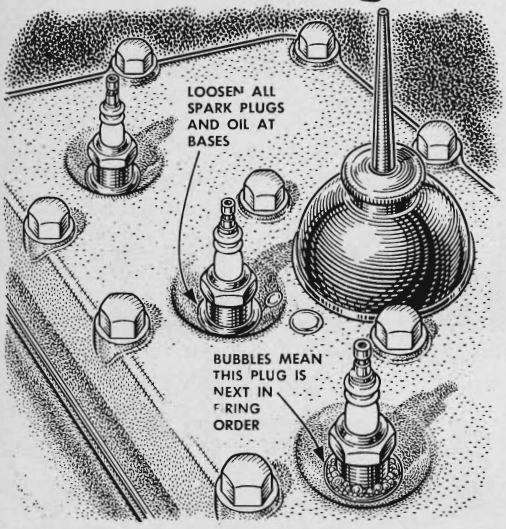
Protect your eyes from falling dirt and dripping grease and oil by wearing goggles when you're working underneath a car. Swimming goggles will do the job nicely and are generally available for less than a dollar a pair.



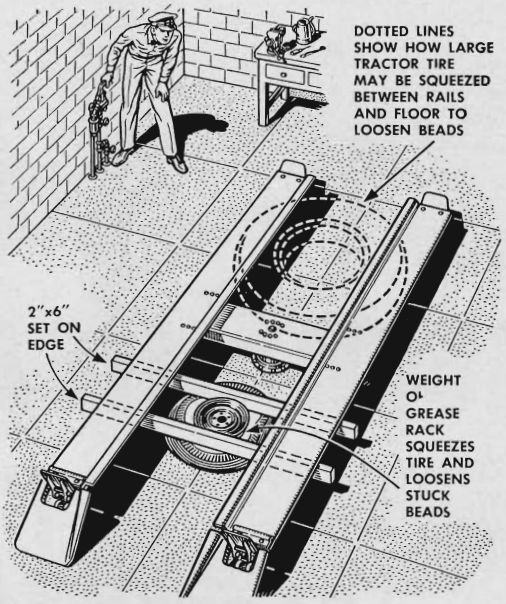
Want interior lights off—with doors open? You can get around the automatic door switches by fastening little levers, bent from thin steel, under the switch-mounting screws. Just flip the levers up when you want to hold the switches off.

 Please turn to page 202 for more auto hints

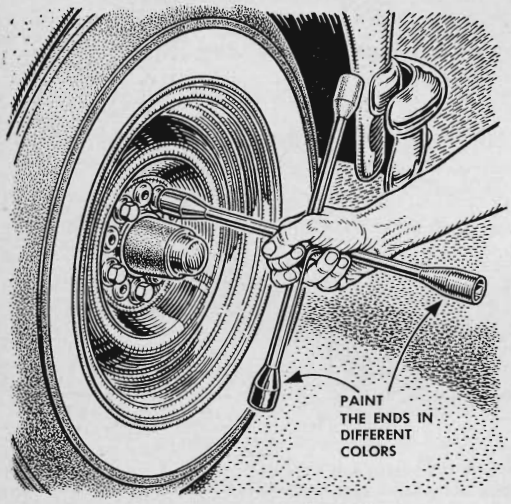
More Hints from the Model Garage



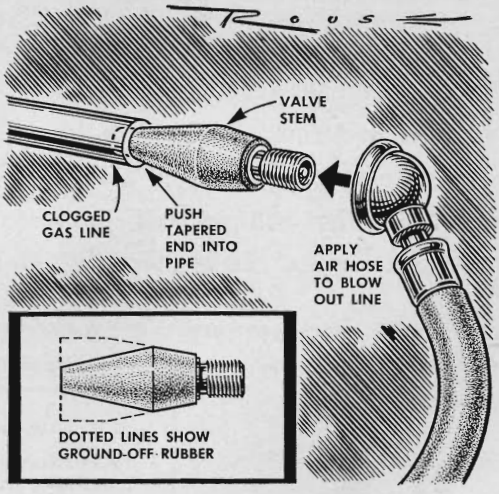
Bubbles in oil reveal the firing order of the cylinders when you have to check the timing of a strange engine. Loosen the spark plugs, squirt a little oil into the spark-plug wells, and then crank the engine slowly while you watch the order in which bubbles appear in the oil.


DOTTED LINES SHOW HOW LARGE TRACTOR TIRE MAY BE SQUEEZED BETWEEN RAILS AND FLOOR TO LOOSEN BEADS
2"x6" SET ON EDGE
WEIGHT OF GREASE RACK SQUEEZES TIRE AND LOOSENS STUCK BEADS

Tightly stuck tire beads are broken effortlessly by one garageman—he lowers the grease rack on them. For most tires, a pair of hardwood two-by-sixes six feet long are placed edgewise across the tire next to the rim. For big tires that just span the rack, no spacers are needed.

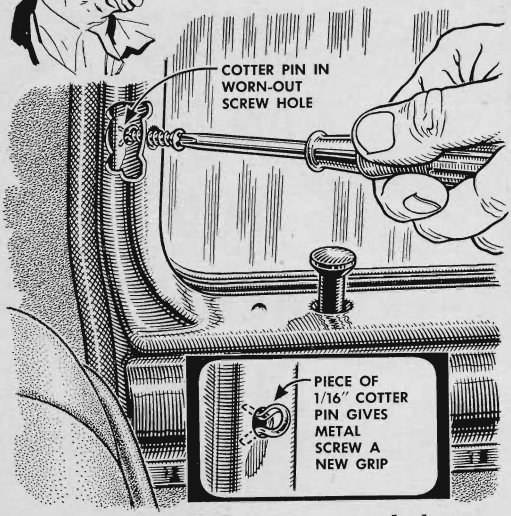


Paint each end of an X-type lug wrench a different color and you'll save all that time that you once wasted looking for the end with the right socket. Just remember the right color for the job you are working on at the moment.

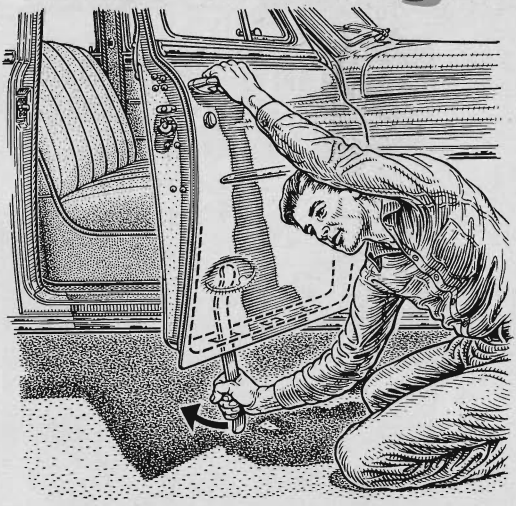

VALVE STEM
CLOGGED GAS LINE
PUSH TAPERED END INTO PIPE
APPLY AIR HOSE TO BLOW OUT LINE
DOTTED LINES SHOW GROUND-OFF RUBBER

To blow out tubing easily, make yourself a quick-connect adapter that fits the compressed-air hose to lines of almost any size. The adapter is simply a valve stem from an old tire tube with its end ground to a taper as shown in the inset.

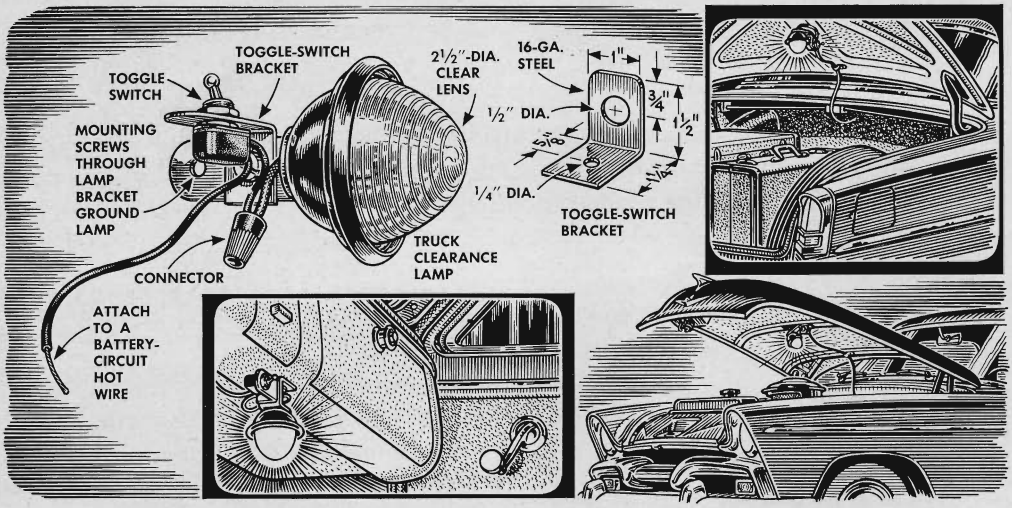
Hints from the Model Garage



A cotter pin will fix an oversize hole into which molding must be screwed. Spread the pin, squeeze together and put it into the hole. The screw, which is of harder metal than the pin, will force itself between the pin and the side of the hole.



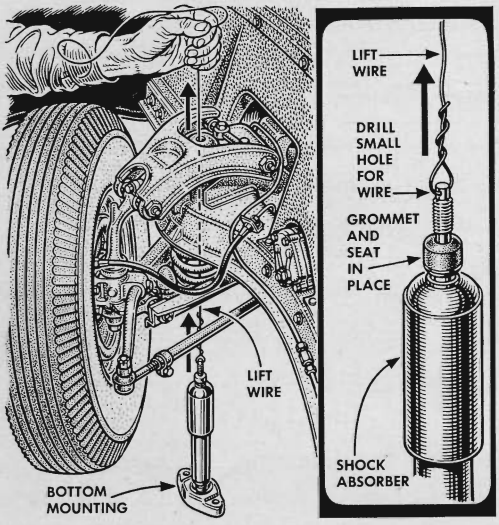
You can straighten dents in a door without taking off the upholstery if you insert the pry bar through the drain holes at the bottom of the door. You may have to enlarge the holes somewhat to fit a tool like a tire iron through them.



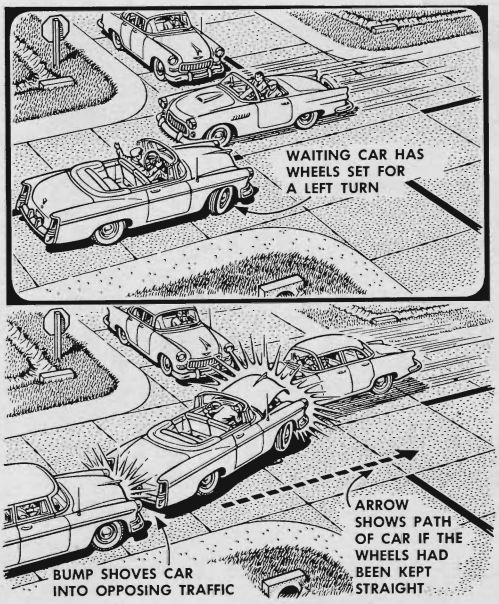
Light wherever you want it—in the trunk, under hood or dash—is inexpensive to get with truck clearance lamps. These small plastic-lensed units are stocked by auto-supply dealers in a variety of styles and with several kinds of mounting brackets. The simple type shown above often sells for less than 50 cents. The toggle switch is attached with a bracket bent from steel, and its wire is connected to the hot side of the battery circuit. The mounting screw makes the ground connection.

Please turn to page 208 for more auto hints

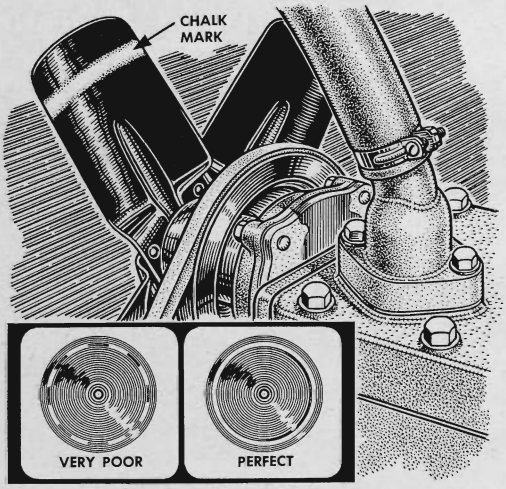
More Hints from the Model Garage



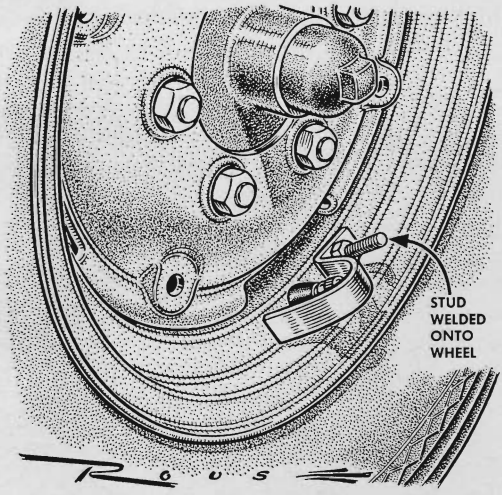
Airplane-type shock absorbers are easier to install on some recent cars if you use this method. Drop a wire through the hole in which the shock fits and thread it through a small hole drilled at the top of the shock. Then pull up on the wire, maintaining even tension while you fasten the shock absorber into place.


WAITING CAR HAS WHEELS SET FOR A LEFT TURN
ARROW SHOWS PATH OF CAR IF THE WHEELS HAD BEEN KEPT STRAIGHT
BUMP SHOVES CAR INTO OPPOSING TRAFFIC

Keep your wheels straight when you wait at an intersection to make a left turn. That way you'll just bounce straight ahead if a following car bumps you from the rear. If you sit there with your wheels turned to the left as you wait for an opening, the bump may push you out of your lane and into the oncoming traffic.

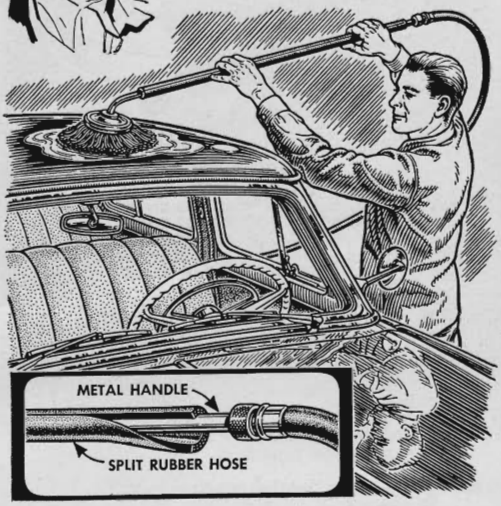


The fan can help tune an engine. Make a chalk mark across one blade an inch from the top. Then watch the fan while you set the idling screws. When the chalk mark shows as an unbroken circle (right inset), the engine is idling properly.

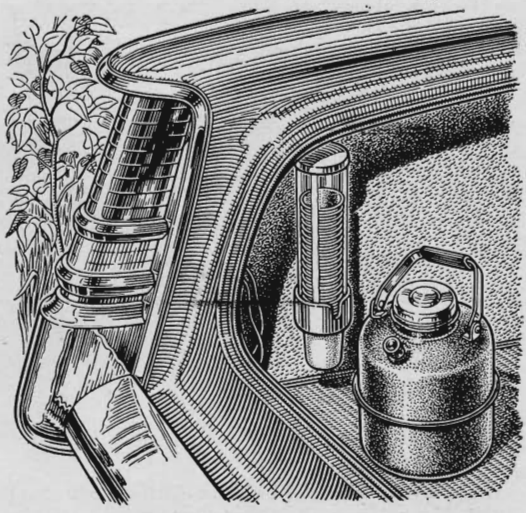


Valve stems on the tires of farm vehicles are vulnerable to damage from ruts, rocks and even hogs, that chew them. One garageman protects the stems by welding studs or headless bolts to the rims to hold on bent sheet-metal guards.

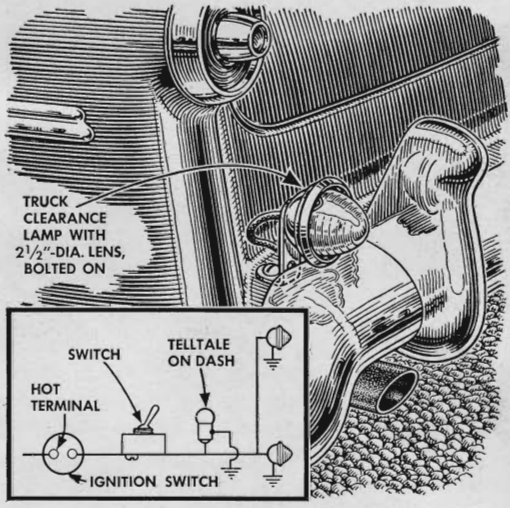
Hints from the Model Garage



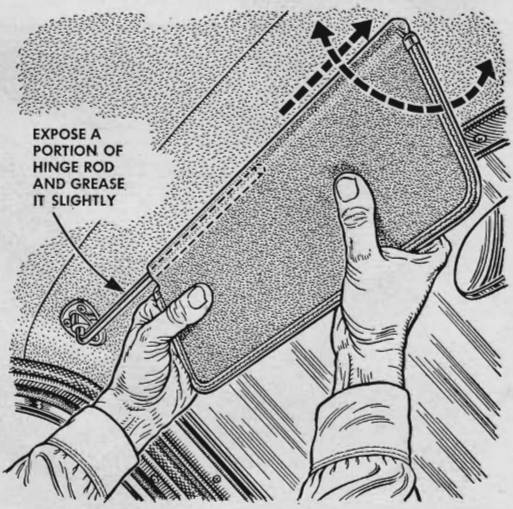
Protect the car finish if you use a mop-type washer like this. Slit a piece of rubber garden hose lengthwise and slip it over the handle. In cold weather the hose will also keep your hands warmer.



A paper-cup dispenser mounted in the trunk of the car is a handy accessory for those who have frequent picnics or roadside snacks. Sheet-metal screws will probably be best for mounting it.



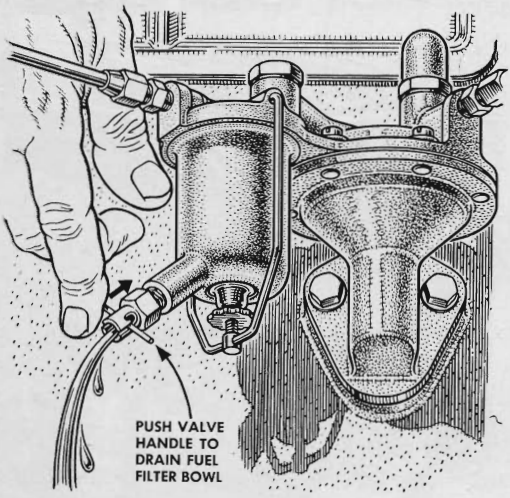
You can have back-up lights—practically in a jiffy. Buy a pair of chrome-plated truck clearance lights with clear lenses. They come complete with mounting brackets and are easily bolted in place. Wire in parallel. Control with a manually operated switch on the dash.



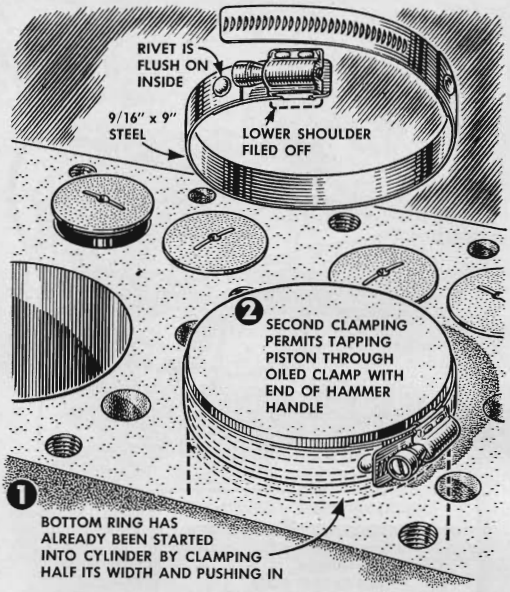
Up-and-down movement of a sun visor can be made easier on some cars by pulling it about halfway off the hinge rod with a twisting motion and applying just a touch of petroleum jelly. Don't pull it too far or apply too much jelly—you may loosen the visor too much.

Please turn the page for more auto hints

More Hints from the Model Garage

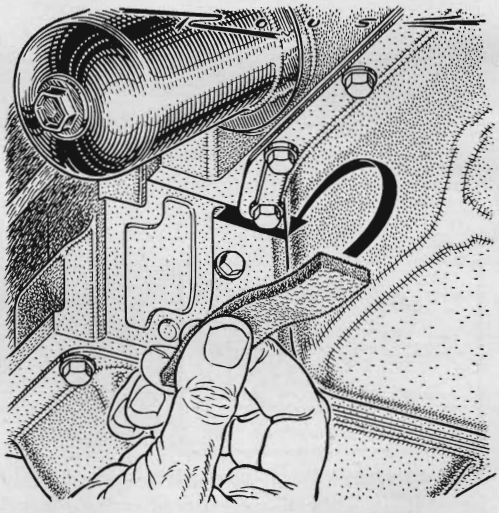


Quicker draining of fuel sediment can be provided in some cars and tractors by fitting on an airplane-type filter bowl in place of the regular glass bowl. These bowls have a drain valve at the bottom, which makes it unnecessary to remove the bowl itself. They are made in two diameters for light-plane fuel lines.


RIVET IS FLUSH ON INSIDE
9/16" x 9" STEEL
LOWER SHOULDER FILED OFF
2
SECOND CLAMPING PERMITS TAPPING PISTON THROUGH OILED CLAMP WITH END OF HAMMER HANDLE
1
BOTTOM RING HAS ALREADY BEEN STARTED INTO CYLINDER BY CLAMPING HALF ITS WIDTH AND PUSHING IN

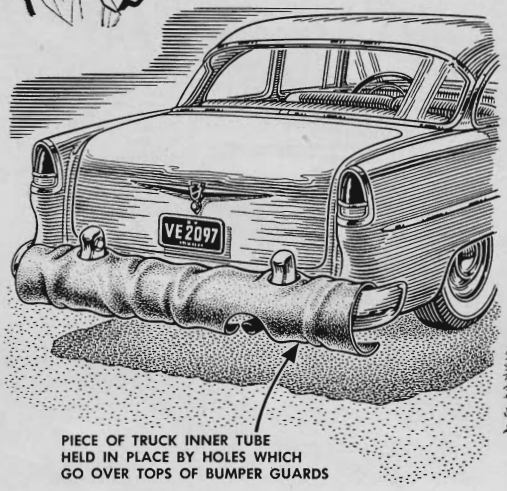
A piston-ring compressor can be improvised at little cost from a worm-gear hose clamp. File off one shoulder from the screw housing, hacksaw the gear band from the gear housing and rivet a strip of steel 9/16″ wide and 9″ long between them. Use the compressor as shown, first to compress one ring, then those above.

Fleece polishing pad gummed up with rubbing compound and polish? Put the buffer on the floor and turn it on, holding with one hand. With the other put a new wire brush gently against the fleece. This combs it out as clean as new.

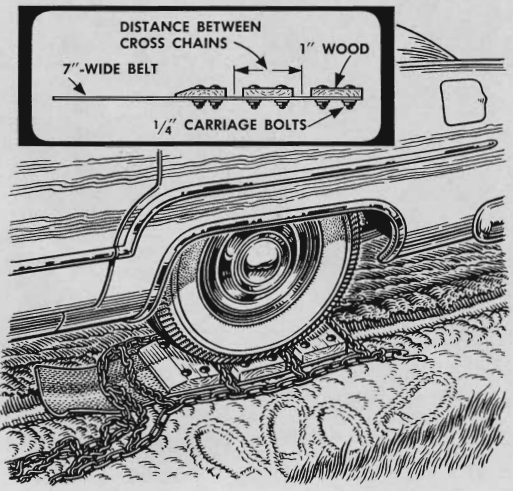


Cement a piece of felt over the openings that you'll find on some Chrysler-built cars between the rear of the oil pan and the left and right sides of the front face of the clutch bell housing. This keeps dirt out of the clutch assembly.

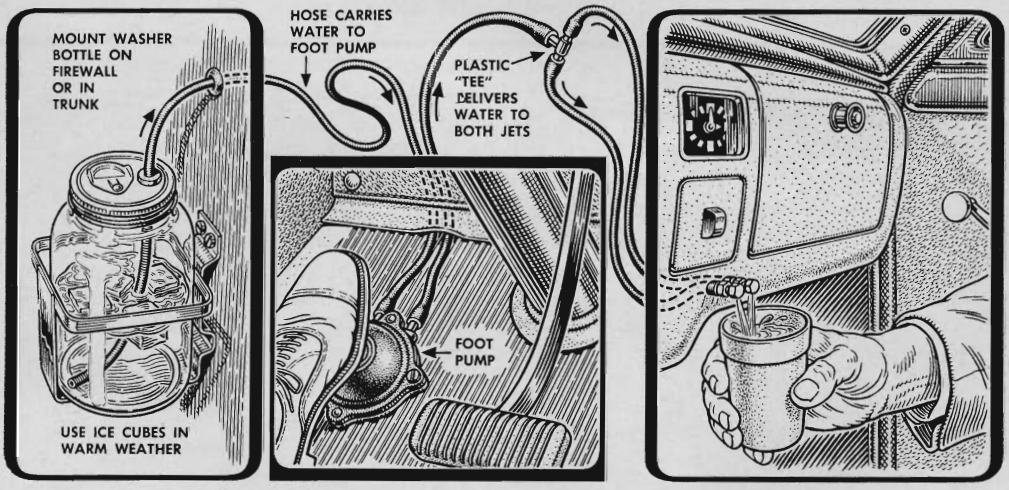
Hints from the Model Garage



Chrome saver—that's what one man calls this strip of truck inner tubing. The bumper guards, projecting through holes, hold it over the bumper to protect the chrome when he has to be pushed.



Wood blocks help put chains on to get out of mud. Move the car forward as far as you can, put the blocks, with the chains on top, behind the wheel, back onto the blocks, and then fasten chains.

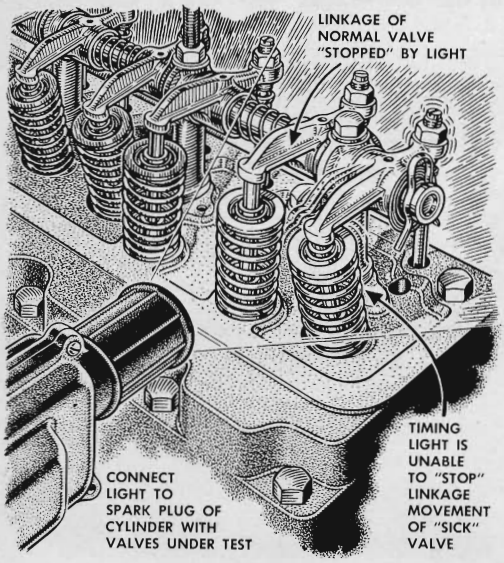


Running water in your car—for drinking or washing small fingers sticky with candy—is simple to install if you adapt a windshield-washer kit available from accessory stores for about $5.

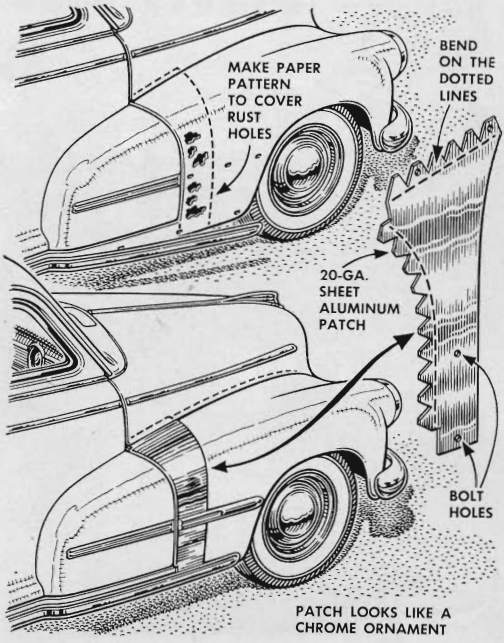
The kit includes a jar with a bracket that is screwed to firewall or trunk, a foot-operated pump that goes near the headlight-dimmer switch, rubber tubing, and two jets. For your water supply, simply mount the jets in holes in the dash instead of outside the windshield.

Please turn the page for more auto hints

More Hints from the Model Garage

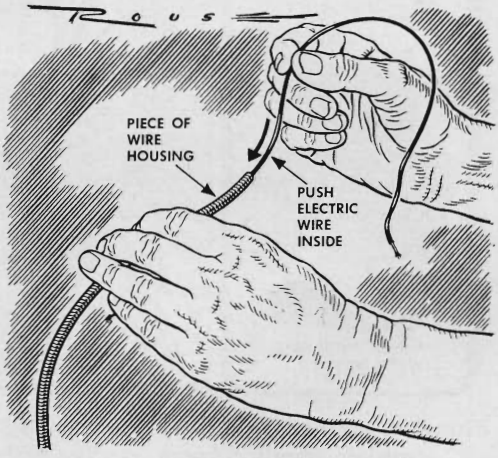

LINKAGE OF NORMAL VALVE "STOPPED" BY LIGHT
TIMING LIGHT IS UNABLE TO "STOP" LINKAGE MOVEMENT OF "SICK" VALVE
CONNECT LIGHT TO SPARK PLUG OF CYLINDER WITH VALVES UNDER TEST

Try a timing light when you suspect sticking valves. When the cylinder fires, the valves should be closed—and both valve stem and spring will appear stationary under the timing-light flash. If there is sticking, you will see a hesitant movement of valve stem or spring.


MAKE PAPER PATTERN TO COVER RUST HOLES
BEND ON THE DOTTED LINES
20-GA. SHEET ALUMINUM PATCH
BOLT HOLES
PATCH LOOKS LIKE A CHROME ORNAMENT

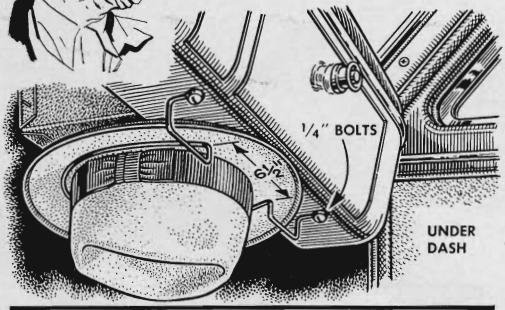
A quick fix for a rusted fender is an overlay of sheet aluminum—it looks like extra chrome. Remove trim pieces and make a paper pattern of the area. Snip the aluminum, then stretch and hold it in position with bolts concealed by the hood and trim. Scallops lock it tighter.

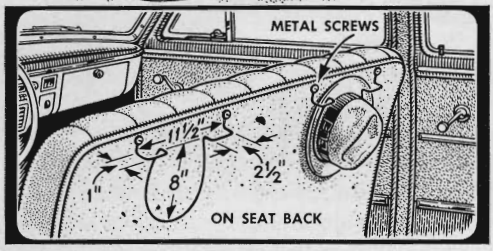
Distributor troubles sometimes come from hard-baked deposits that a cloth won't clean out. They yield readily to a fine wire brush, 2″ or 2½″ in diameter, that you can mount in a file handle.



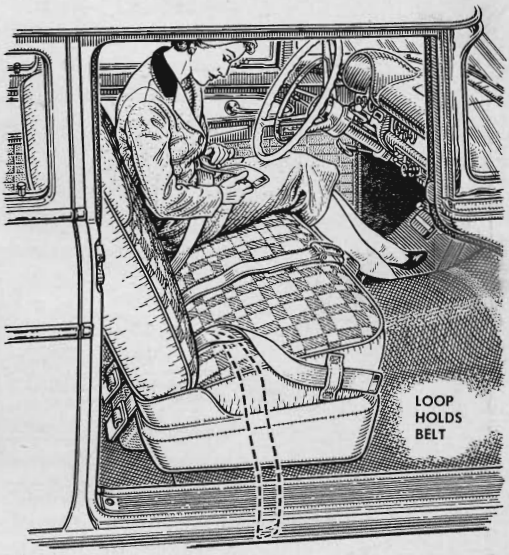
To protect auto wiring that is subject to heavy abrasion, make up your own miniature BX cable by threading the wires through the flexible armor used to sheathe speedometer cables or choke wires.

Hints from the Model Garage

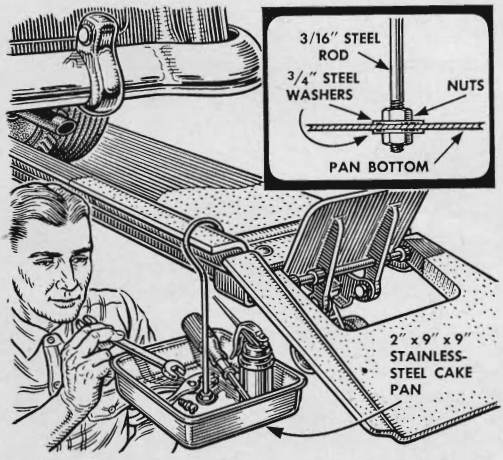




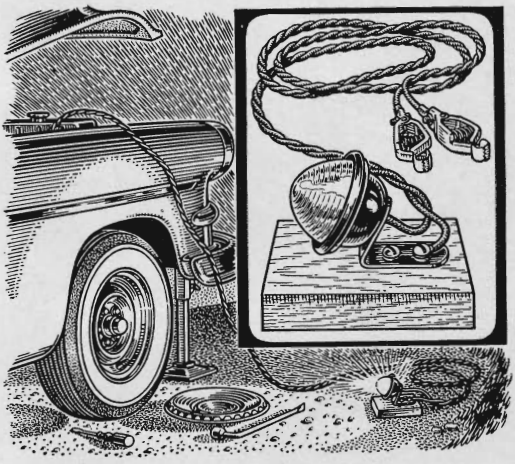
Your best hat won't get sat on if you stow it out of the way in a holder. Coat-hanger wire will do for back-of-seat holders, but hard No. 9 wire should be used under the dash to support the hat.



Keep safety belts from dropping out of the car by tucking the ends of the outer straps into loops stitched to the ends of the seat. The belts will stay cleaner, and won't get pinched by the car door.



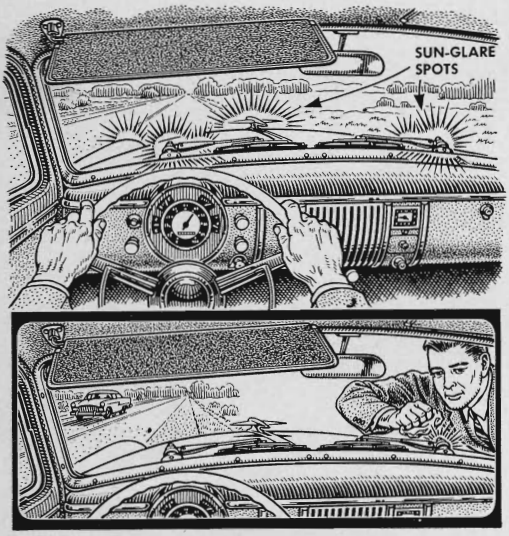
A hook-on tray hung within reaching distance will save fumbling for tools or parts while working under a car. The tray shown is kept stocked with wrenches and extra fittings for a lube job, saving the garageman many steps. On a repair job, the tray could hold small parts.



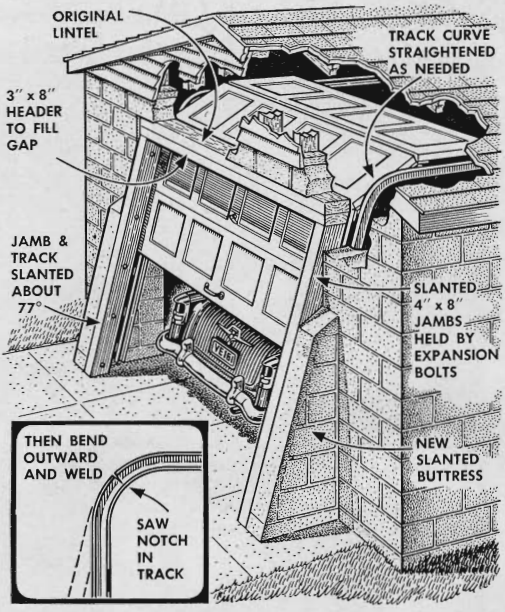
A compact trouble light can be assembled quickly using a truck clearance light, 15 feet of wire and a pair of battery clips. Bend the bracket to aim the lamp upward and screw it to a small block of wood. Having no batteries of its own, it won't be dead when you need it.

Please turn the page for more auto hints

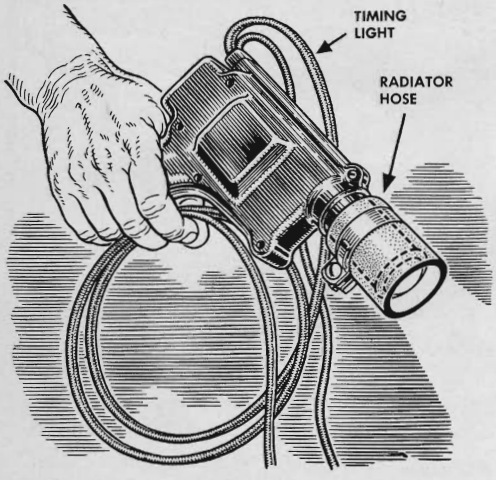
More Hints from the Model Garage



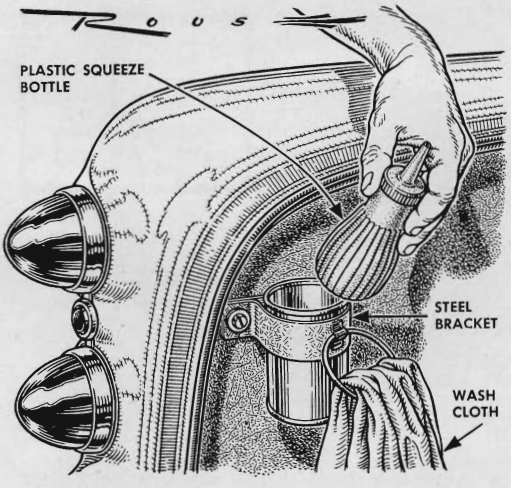
A TV trick is to coat bright objects with a non-reflecting film to keep glare out of cameras. Next summer, or when driving south this winter, you can soften glaring reflections that bounce off chrome parts into your line of vision by coating them with liquid car cleaner. The white powder rubs off easily at the journey's end.


ORIGINAL LINTEL
TRACK CURVE STRAIGHTENED AS NEEDED
3" x 8" HEADER TO FILL GAP
JAMB & TRACK SLANTED ABOUT 77°
SLANTED 4" x 8" JAMBS HELD BY EXPANSION BOLTS
NEW SLANTED BUTTRESS
THEN BEND OUTWARD AND WELD
SAW NOTCH IN TRACK

You can add footage to a garage that has the type of door shown. Remove the door jambs, notch the track where it curves and bend it out so that the door clears the car's bumper. Add an extra header to close the gap at the top of the door and reset the jambs to suit the track. Finish with slanted buttresses to match garage.

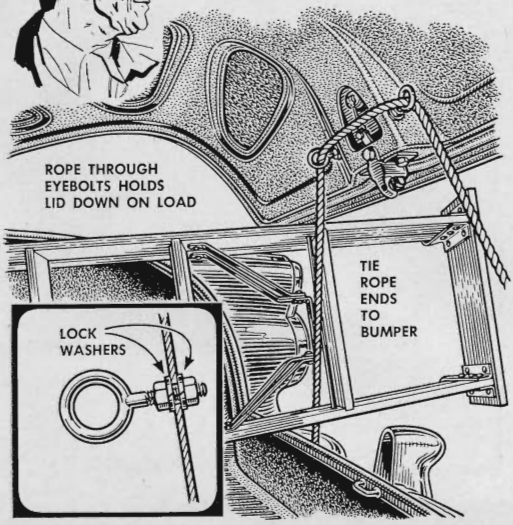


A short piece of radiator hose clamped over the lens end of a timing light will protect the light from being shattered if dropped or accidentally touched against a rotating fan blade. Paint the inside of the hose white to help throw light.

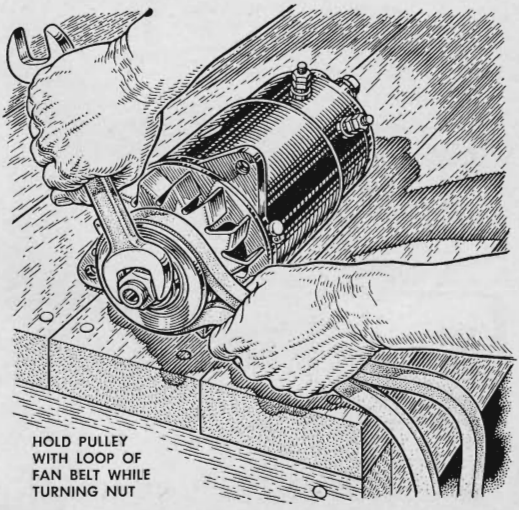


Stow a plastic squeeze bottle in a tin can screwed to the side of your car's trunk. Filled with windshield cleaner, it is convenient for keeping windows clear on a trip. In winter, fill the bottle with a defrosting solution to remove sleet.

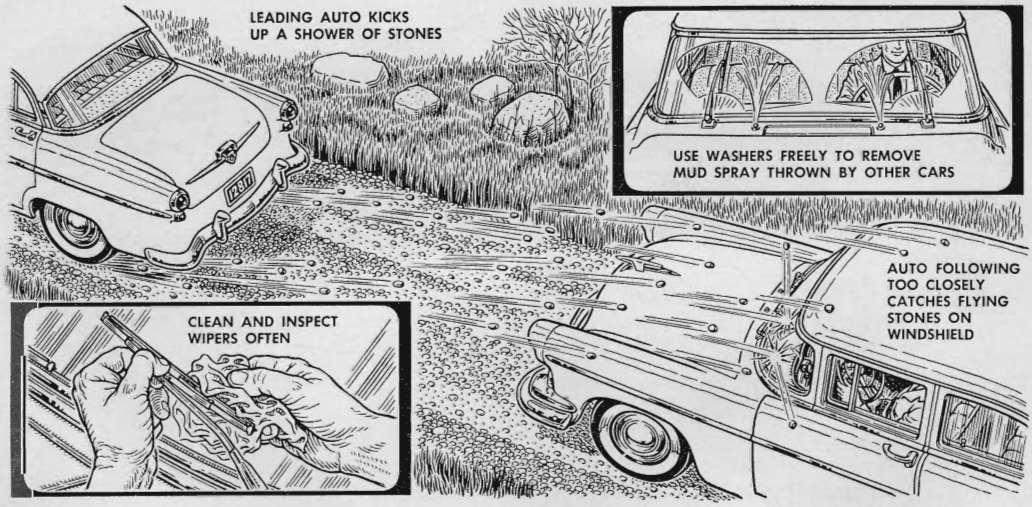
Hints from the Model Garage



Tie the car trunk lid down on loads that hang over, by threading a rope through two eyebolts installed on the inner frame of the lid. Drill holes to fit the bolts and lock them in place with double nuts. Tie the rope to the bumper.



To remove a generator pulley without damaging it, loop the fan belt around the groove and grip it firmly while you loosen the nut. If the nut is stubborn, use an old fan belt and lock it in a vise to get a tighter grip on the pulley.


LEADING AUTO KICKS UP A SHOWER OF STONES
USE WASHERS FREELY TO REMOVE MUD SPRAY THROWN BY OTHER CARS
AUTO FOLLOWING TOO CLOSELY CATCHES FLYING STONES ON WINDSHIELD
CLEAN AND INSPECT WIPERS OFTEN

Modern windshields are expensive. Here are three ways to safeguard yours:

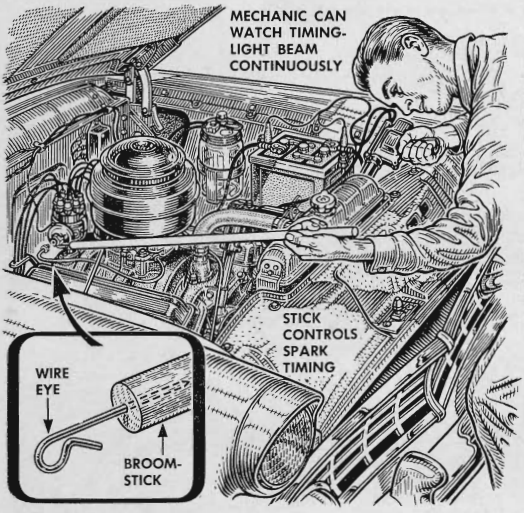
Use your windshield washer to flush dirty road spray thrown up by other cars, and use wipers briefly. Glass is hard, but grit particles are even harder.

Keep your distance when following another car on an unimproved road. The other fellow's tires may hurl stones or sand, marking or fracturing your glass.

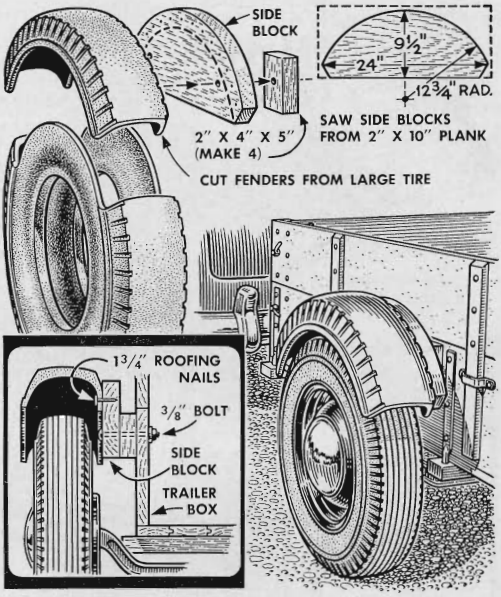
Clean wiper blades often, see that they make contact and have not hardened.

Please turn the page for more auto hints

More Hints from the Model Garage

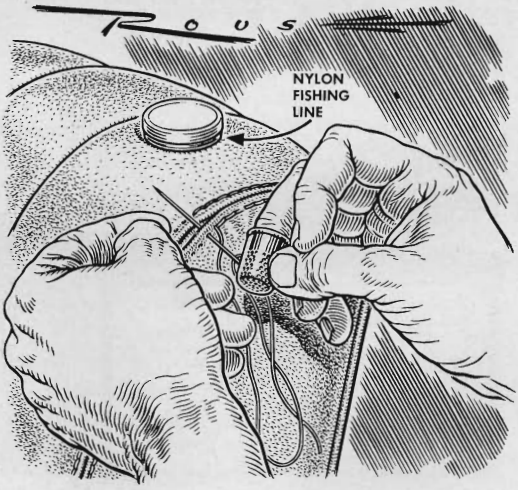


When timing an engine that has the distributor at one end and timing mark at the other, use a stick with a wire eye pressed in it to rotate the distributor body while you beam the timing light on the mark. Disconnect the vacuum line for accurate timing and slip the eye over the fitting on the diaphragm housing.



Make your own trailer fenders to keep the wheels from throwing mud all over your car. Cut segments from a truck tire (7.50 x 17 is a good size) and nail them to blocks bolted to the trailer sides. Use blocks thick enough to position the fenders over the wheels, and set the fenders high enough to allow for spring action.

Don't let a "wise guy" push your car ahead into a fireplug area or no-parking zone to make room for his car. Turn your wheels toward the curb when near such a spot and then you'll be sure to find your car right where you left it.



Stitch open seams in slip covers or car upholstery with nylon fishing line. It comes in several colors, and line rated at 12 to 15 lb. test is hard to break. An upholsterer's needle will make stitching seams on flat surfaces easier.